



Ship/Lighter/Platform Interface

JLOTS R&D SYMPOSIUM VI
29 - 31 January 2001

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Ship/Lighter/Platform Interface

- Issues/Observations
- Objective
- Deep Draft Composite Camel
- Benefits
- Status
- Questions





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Ship/Lighter/Platform Interface

Issues/Observations

- Each scenario is different based on the type of watercraft, type sealift ship, mooring position, and RRDF configuration and location relative to ship.
- Heave most sensitive motion for watercraft (not roll).
- Lighter maneuverability and sea-keeping varies with lighter type.
- Current fenders are not SS3 capable due to rupture, damage, and failure; gap between fenders; and size variations may not support ops (i.e., large fenders roll onto low freeboard craft).
- Short mooring pendants cause snap loading and potential danger.
- Difficult to capture pendants with boat hooks.

Ship/Lighter/Platform Interface

Objective:

Develop Sea State 3 capable docking and mooring systems for JLOTS lighters, ships and platform



Ship/Lighter/Platform Interface

**T-
ACS**



LMSR



MPF



FSS

Ship/Lighter/Platform Interface

LSV

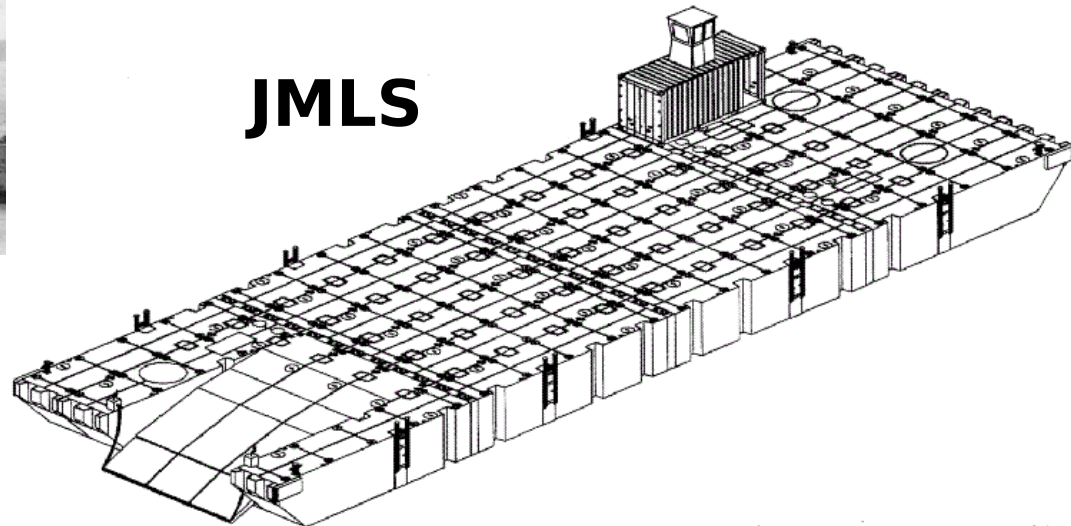


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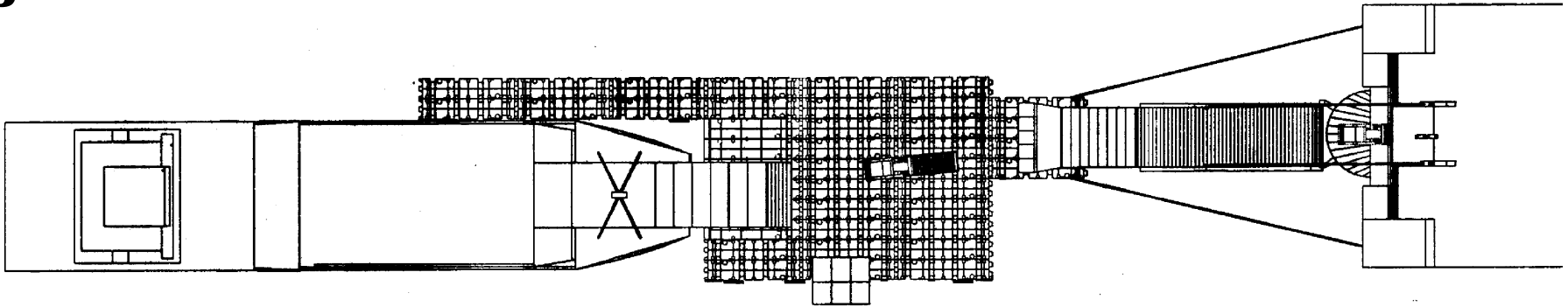
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JMLS

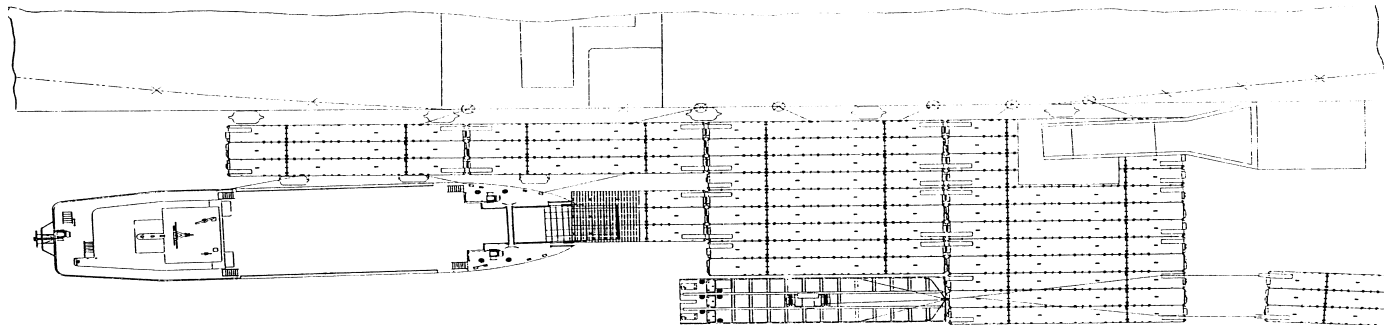


Ship/Lighter/Platform Interface

JMLS RRDF



MCS RRDF





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FY99:

- **Defined interface problems**
- **Benchmarked motion analysis (T-ACS + NL CF)**
- **Initiated technology survey**

FY00:

- **Brainstorming session for concepts**
- **June - Complete performance requirements study**
- **July - Complete technology survey**
- **July - Complete motion analysis of SLP interfaces (T-ACS, LMSR, RRDF, JMLS, LCU-2000, LSV)**
- **Developed key criteria for evaluation of concepts**
- **Selected system(s) for further development**

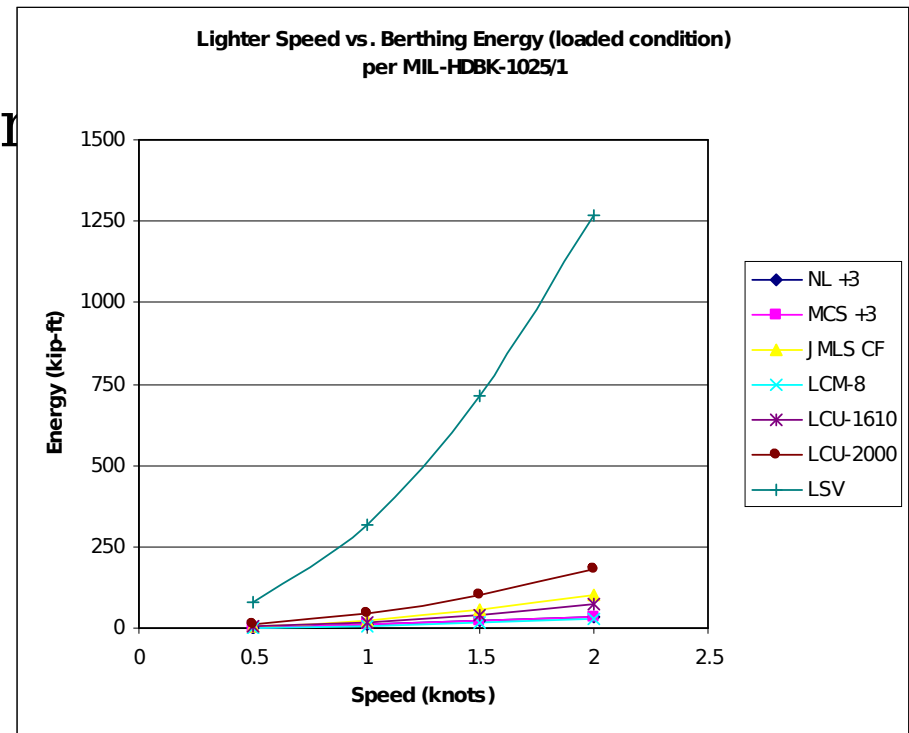
FY01

- **Preliminary design & engineering analysis**
- **Model test/simulation and test plan development**
- **Detailed design and report**

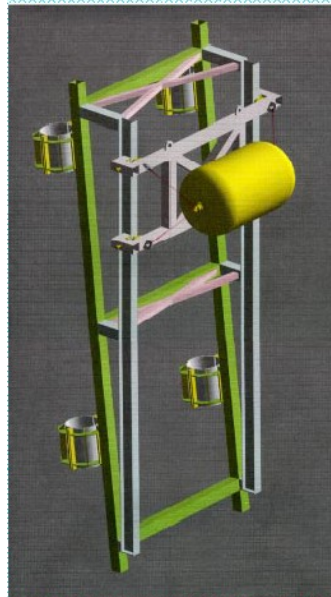
Ship/Lighter/Platform Interface

Design Requirements

- SS3 operability / SS5 survivability
- ISO compatible
- Berthing energy absorption
- Minimum/maximum stand-off distances
- Weight
- Mooring line angles

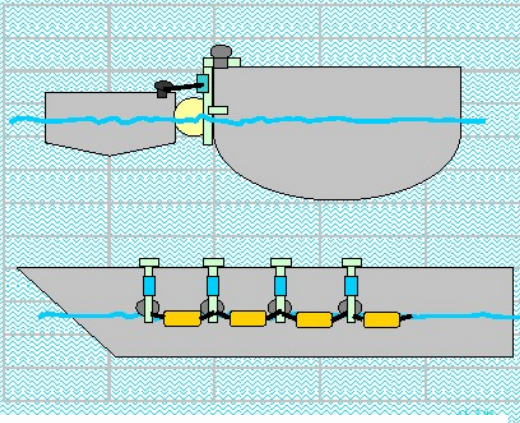


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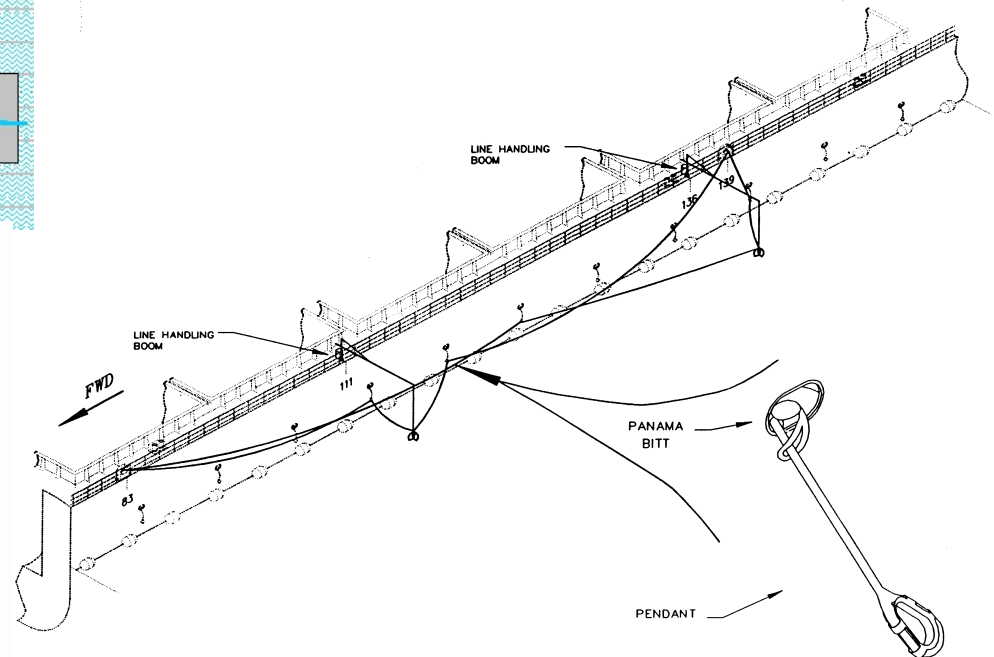
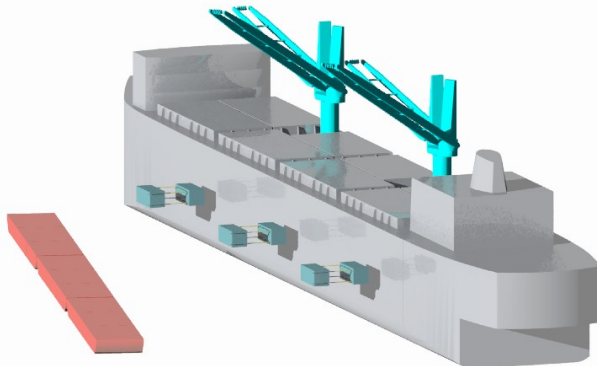


LIGHTER OPERATIONS

Government Concept

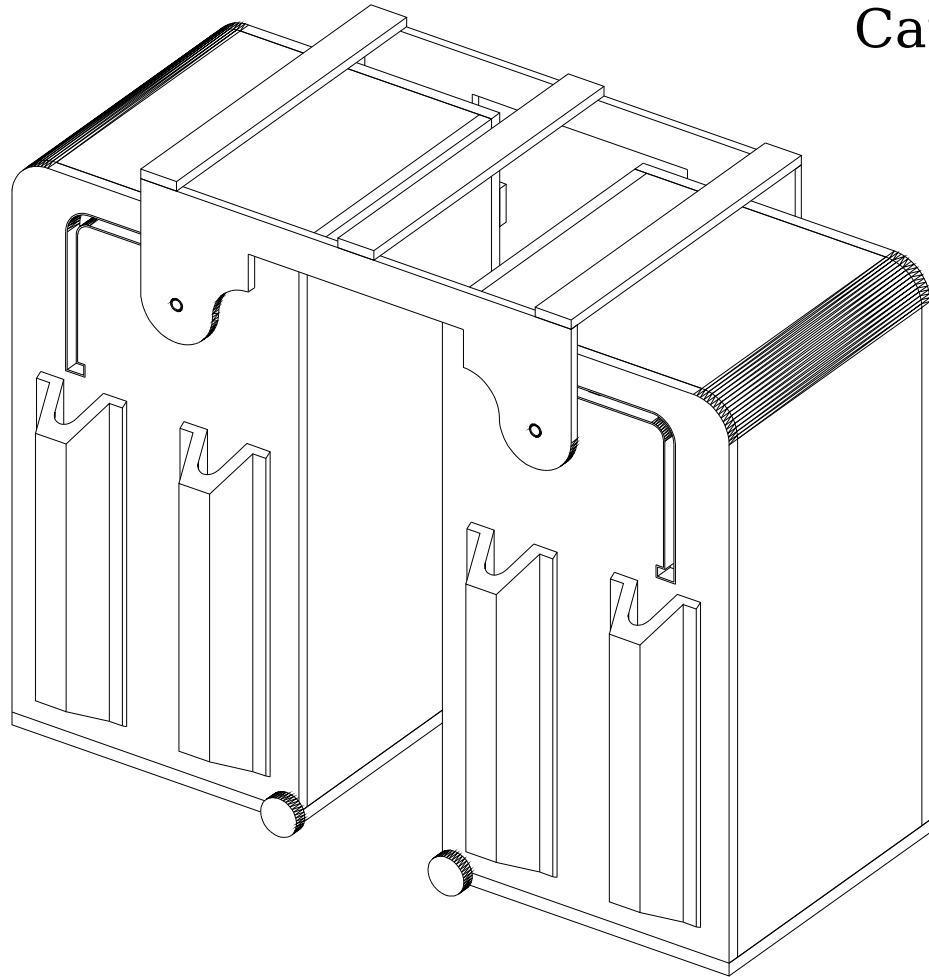


Interface Concepts



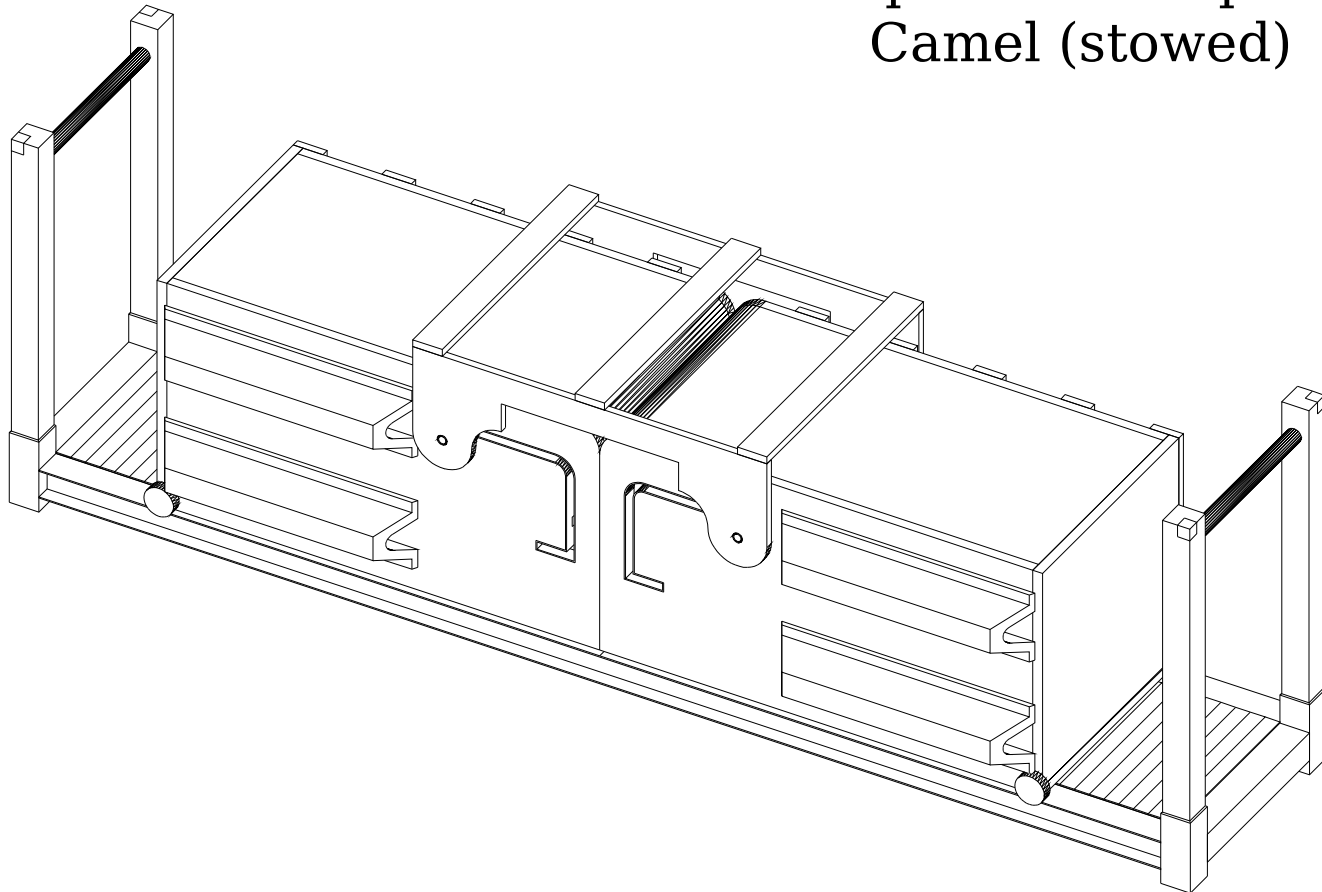
Ship/Lighter/Platform Interface

Deep Draft Composite
Camel (deployed)

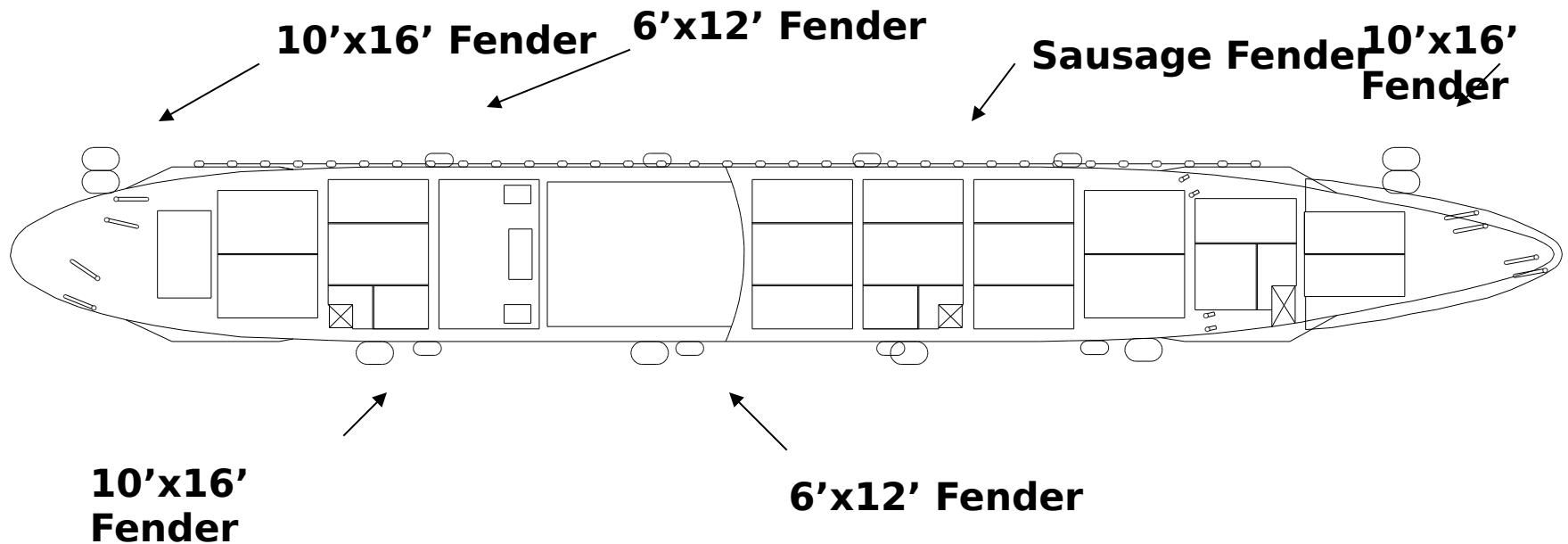


Ship/Lighter/Platform Interface

Deep Draft Composite
Camel (stowed)

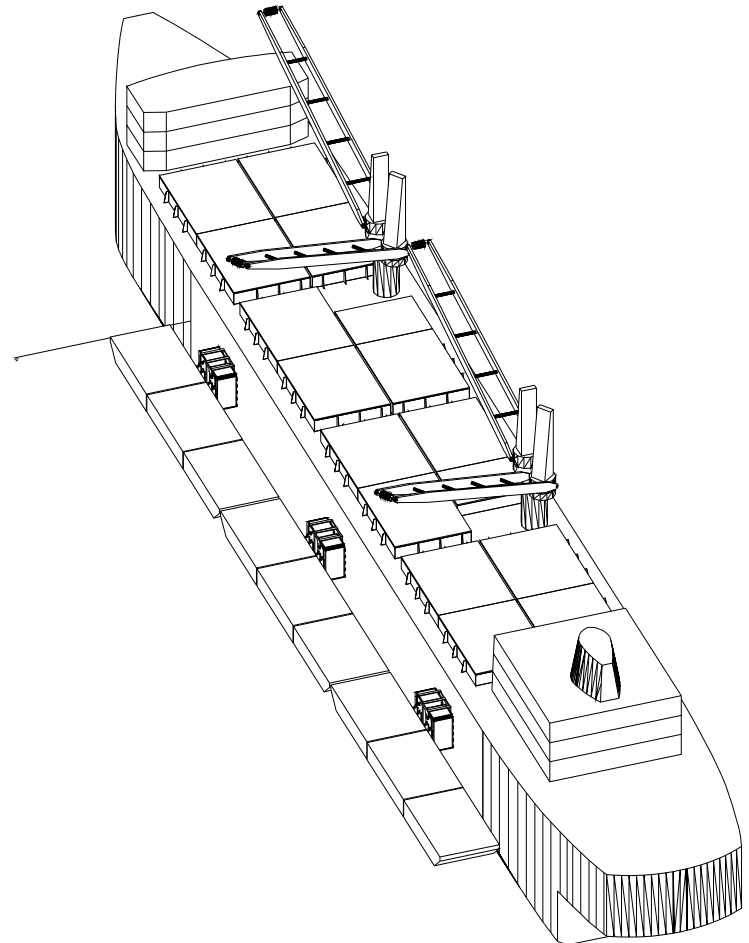
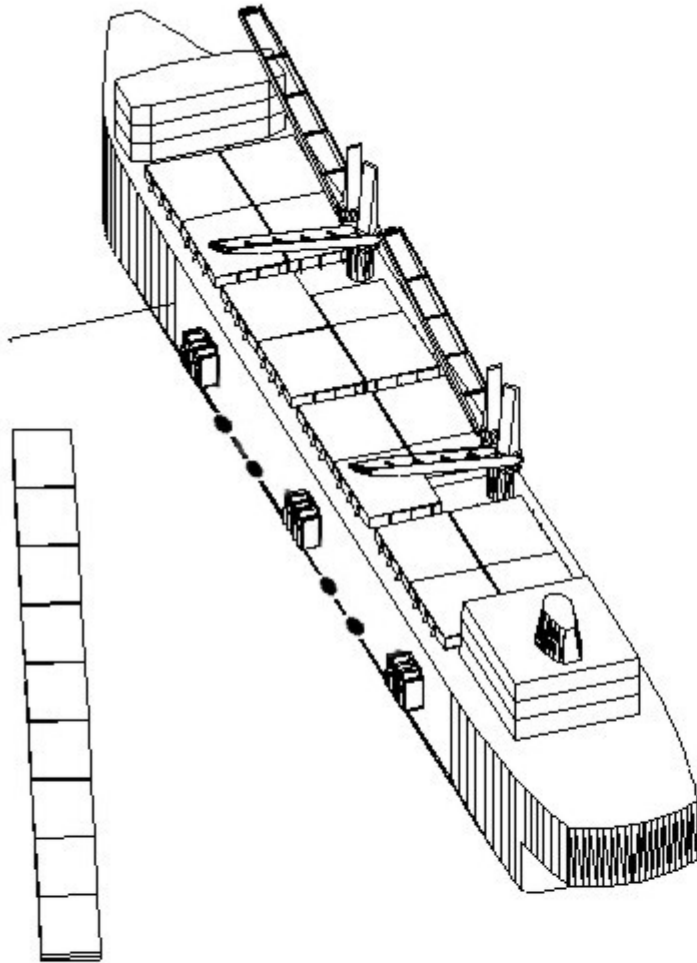


Ship/Lighter/Platform Interface



SS Equality State (T-ACS 7 Class)
Existing fender configuration

Ship/Lighter/Platform Interface



Ship/Lighter/Platform Interface

Benefits

- Configured for multiple-sized lighters - up to LSV
- High strength composite construction
- Corrosion resistant
- Deep draft/high inertia stability features
- SS3 operability / SS5 survivability
- ISO compatible / spreader bar / container cell
- Highway transportable
- Provide 8-foot standoff
- Provide low hull pressure on T-ACS
- Accommodate large relative motions between lighter and ship
- Low life cycle cost
- Low maintenance



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